

REMARKS

Reconsideration and allowance of this application, as amended, are respectfully requested.

Claims 2, 3, 8 and 12 stand rejected under 35 USC 103 (a) as being unpatentable over Hakamatsuka et al. (US Patent 5,410,642) in view of Yakawa (US Patent 6,421,110).

Claims 4-6, 9, 10, 13 and 14 stand rejected under 35 USC 103 (a) as being unpatentable over Hakamatsuka et al. in view of Yakawa and Enomoto (US Patent 6,356,339). Claims 4-6, 9, 10, 13 and 14 stand rejected under 35 USC 103 (a) as being unpatentable over Hakamatsuka et al. in view of Yakawa and Parulski (US Patent 5,914,748). These grounds of rejection is respectfully traversed.

Claims 2-6 and 8-10 are directed to apparatus and methods for detecting a photograph portion attached to the predetermined photograph attachment portion of an ID card application form and making an ID card on which an image extracted from the detected photograph portion is printed. Claim 12-14 are directed to an ID card on which an image is printed, the image being prepared by detecting a photograph portion attached to the predetermined photograph attachment portion of an ID card application form and extracting part from the photograph portion.

An underlying theme of the claimed inventions is that a photograph is not necessarily attached to the photograph attachment portion of an ID card application form in a correct way. More specifically, it may happen that the attached photograph improperly projects from the photograph attachment portion. If a photograph portion is read to make an ID in a state where the photograph is not accurately attached to the photograph attachment portion, it may happen that the read image data includes data on the lines (frame lines) designating the photograph attachment portion. If the read image data is printed on an ID card, the lines

(frame lines) designating the photograph attachment portion may be printed together with the photograph of a face.

Under the circumstances, the photograph portion must be accurately read from the ID card application form. To this end, an image of the predetermined area of the ID card application form is read, and a photographed edge is detected based on the image data obtained by the image reading means and including at least a photograph attached to the ID card application form, rules lines and characters. To be more specific, an ID card application form is read, and the image data obtained thereby is subject to filter processing. By this processing, candidates for vertical and horizontal components are extracted. The candidates for vertical and horizontal components are obtained from the lines, characters or photograph portions of the ID card application form. It should be noted that the size of the photograph attached to the ID card application form is predetermined. This means that a combination of vertical and horizontal components corresponding to a preset photograph size is known beforehand. Therefore, the known combination of vertical and horizontal components is compared with extracted candidates for vertical and horizontal components, and the photograph edge is detected by selecting appropriate candidates for vertical and horizontal components from the extracted candidates.

In the Yakawa arrangement, a film scanner 3 reads an image frame (effective image data) and a surrounding area (surrounding image data) from a film 1, and an effective image extracting section 62 checks the RGB density values of each pixel and the density distribution so that the surrounding image data is definitely determined and the effective image data is extracted.

The Examiner indicates that lines 8-14 of column 6 of Yakawa teach a technique of detecting and extracting an actual image region according to vertical and horizontal components. Admittedly, Yakawa may describe a technique for determining surrounding image data based on the RGB density values and density distribution, and of extracting effective image data on the basis of the determination. However, Yakawa does not disclose or suggest our claimed photograph edge detection technique, i.e., the technique wherein candidates for vertical and horizontal components, which are those of the photograph, ruled lines and characters of the photograph portion of the ID card application form and which are included in the image data obtained by the image reading means, with combinations of the vertical and horizontal components entered based on preset photograph sizes, and wherein a photograph edge is detected from the candidates for vertical and horizontal components include in the acquired image data.

Yakawa discloses technology for photographic films. In such a film as disclosed in Yakawa, the density difference between an image frame (an effective image data portion) and surrounding areas (a surrounding image data portion) is considered very large. It is therefore thought that the effective image data portion can be extracted very easily on the basis of the density difference.

In contrast, many lines, marks or characters are printed on an application form, such as an ID card application form to which our claimed inventions pertain, and the density difference in each portion of the ID card application form is small. In other words, the ID card application form has such a density that looks light as a whole. If the background image or figure image has such a density that looks light and if it is included in a photograph attached to the ID card application form that has a small density difference as a whole and exhibits a light tone of color as a whole, photograph detection based on the density difference,

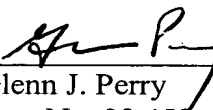
such as the technology disclosed in Yakawa, does not enable accurate and easy detection of a photograph edge.

With the above in mind, our claimed inventions perform filter processing with respect to image data read from the photograph attachment portion of an ID card application form so as to extract candidates for vertical and horizontal components, compares the extracted candidates with combinations of vertical and horizontal components of a photograph of a preset photograph size, and detects the photograph edge based on the comparison.

Our claimed photograph edge detection technique using the vertical and horizontal components is not disclosed in any of the cited references, including Yakawa.

All outstanding matters having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,

By: 
Glenn J. Perry
Reg. No. 28,458
Telephone: (703) 905-2161
Direct Fax: (703) 738-2277

PILLSBURY WINTHROP LLP
1600 Tysons Boulevard
McLean, Virginia 22102
Switchboard: (703) 905-2000
Office fax: 703-905-2500